
MOSQUE TYPOLOGY IN INDONESIA BASED ON VERNACULAR ARCHITECTURE

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ABSTRACT

The mosque which was built in various regions in Indonesia has a variety of its uniqueness. People in Indonesia in general only see that people understand architecture in a mosque only as a domed building or apply Middle Eastern elements only. However, many mosques in Indonesia have applied various Vernaculars to their architectural applications and experienced significant changes to the concept and form of the building. This study aims to find the application of Vernacular facades to 4 mosques in Indonesia, namely the Great Mosque of West Sumatra, the Sunan Ampel Mosque, the Great Mosque of Central Java, and the Grand Mosque of K.H. Hasyim Asyari. The method used is descriptive qualitative with data collection techniques based on journals and articles from the Internet and processed using tables in the form of variables with variables in the form of roofs and mosque wall ornaments. The results of this study are the application of vernacular roof architecture to the mosque in the form of modifications of the local form of each mosque that originates and the application of ornaments on the walls of the mosque which is an adaptation of the local architecture of the local area.

KEYWORDS: façade, mosque, roof, typology, vernacular

INTRODUCTION

The mosque which has been built in various parts of the region in Indonesia has a variety of its uniqueness. Starting from the concept of architectural themes to the shape of the building, the mosque is one of the buildings with its characteristics. The mosque means submission and obedience, the mosque is a place to carry out activities based on obedience to Allah SWT (Dewi & Syamsiyah, 2019). Activities in the mosque are not just worshipping such as prayer and so on. But the mosque can also be the center of da'wah activities for the people, socialize with the surrounding community, and can also learn the existing religious knowledge (Syamsiyah & Muslim, 2018). The typology of each mosque building also has its diversity. The typology of buildings in the architectural context is closely related to the research of the elements that make up the object of an architectural building. It is used as a form of identification of the typological theory. (Wardani & Nugroho, 2019)

Mosques in Indonesia have various types of typological elements, people understand architecture in a mosque only as a domed building or apply Middle Eastern elements only. However, many mosques in Indonesia have applied various Vernaculars to their architectural applications and experienced significant

changes to the concept and form of the building. (Humairah & Mastutie, 2013)

This study aims to find the application of Vernacular facades in 4 mosques in Indonesia. Among them is the Great Mosque of West Sumatra, the Sunan Ampel Mosque, the Great Mosque of Central Java, and the Grand Mosque of K.H. Hasyim Asyari. The selection of the four mosques is based on how the application of Vernacular elements in the building is applied to several subjects of mosque buildings. In the next paragraph, it will be explained in detail what Typology, Facade, and Vernacular Architecture are so that later they can be applied to the mosque which will be discussed.

Typology is a method for defining architectural objects. The typology itself identifies a change to the object of a building based on the basic form of an object, its properties, functions, and the transformation process in changing its shape. (Damayanti, Nugroho, & Santosa, 2019). There are three phases in analyzing a typology. Among them are exploring existing history to find out an idea in a composition, analyzing by finding out a function in an object, and looking for simple shapes in a building based on its basic properties.

The facade is an important element in typology. Aims to communicate a building's function and convey a cultural situation through ornaments and

decorations on the building so that it can provide an overview of a community's collective identity. (Rangkuty & Widyastuti, 2019). The facade itself has several single elements such as the entrance or main entrance, windows, and roof. These elements are formed from several different materials resulting in different shapes, colors, and materials. According to (Lippsmeier, 1980), components in building elements that affect the facade include floors, roofs, and walls.

In a brief sense, Vernacular is a concept of architectural thought which means local (in the sense that this architecture is a form of appreciation for the traditional concept of the local area). Vernacular architecture has local characteristics, adapts the climate to the local ecosystem, uses local techniques and materials, and is all influenced by aspects such as the socio-cultural and economic aspects of the surrounding community (Mentayani, Ikaputra, & Muthia, 2017). Salain (2017), mentions that Vernacular Architecture comes from traditions passed down from generation to generation that get influenced from outside and adopt traditional forms. This architecture develops over time to reflect the environment, culture, and history of the origin of the architecture. The ornaments used in the building are used as a complement and do not leave the cultural values of the local community.

RESEARCH METODE

The method that will be used in this research is descriptive qualitative. Qualitative methods are used to examine natural objects whereas qualitative descriptive research is aimed at describing and describing existing phenomena, paying more attention to characteristics, and quality between activities (Utami, Melliani, Maolana, Fitriana, & Hidayat, 2021). The steps in data collection use primary data in the form of journals and secondary data in the form of sources from the Internet which are processed based on the variables to be studied, namely roofs and walls which focus on the application of Vernacular Architecture to 4 selected mosques, namely the Great Mosque of West Sumatra, Sunan Ampel Mosque, Central Java Grand Mosque, and K.H Hasyim Asyari Grand Mosque. Later the data will be made into a table that will explain how the Vernacular style is applied to each part of the mosque in the form of roofs and wall ornaments so that it can be seen whether the mosque has implemented the Vernacular typology.

RESULT

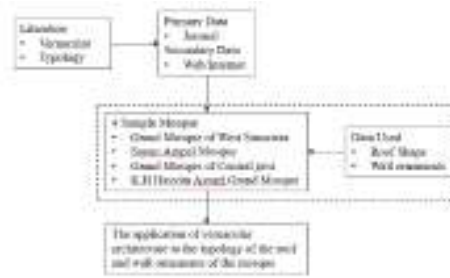


Figure 1. Research method diagram

Roofs

The application of vernacular typology on the roof of each mosque building applies the shape of each area where the mosque is located which will later be modified so that a new formation is formed on the roof of the mosque without eliminating elements of local culture. Application of the roof of the Great Mosque of West Sumatra, the architect got inspiration from 3 forms of symbols, namely the shape of the spring, the shape of the crescent moon, and the shape of the Gadang House. The curved shape of the roof is also inspired by the story of the Prophet Muhammad SAW who at that time used cloth to put the Black Stone stone which at that time the tribal leaders there opposed to putting the stone on the Kaaba. So that the shape of this roof is like experiencing a deflection if a load is placed on it.



Figure 2. Illustration of the deflection of the roof of the mosque (Source: fitra, 2019)

The concept of spring is represented at each end of the roof which means that the spring in question is Zamzam water and is centered and gathered at a point. The point at the end of the roof also explains the 4 main cardinal directions and contains the meaning of adat nan ampek, namely the 4 holy books in Islam.



Figure 3. Illustration of design transformation of the Grand Mosque (Source: Zahir, 2021; Michael, 2020)

The curved shape of the roof of the Grand Mosque is inspired by the crescent moon in nature. The concept of a crescent moon on the roof of the mosque also represents the symbol of the Islamic religion. The use of the crescent moon has been applied since the era of Abdul Malik bin Marwan. The use of a non-scythe in Indonesia is currently a marker for mosques in Indonesia.



Figure 3. The concept of the crescent moon on the roof of the mosque
(Source: Zahir, 2021; Michael, 2020)

The shape of the roof of the Great Mosque is also taken from the Minangkabau traditional house, namely the application of the bagonjong roof. At first glance, this roof has a resemblance to a buffalo horn. This form is an innovation with changing times that are attached to technology and open public thinking but does not eliminate the customs and nature of the local environment. The tip of the bagonjong roof on the roof which was only positioned towards the left and right is made into 4 points in different directions. This concept is an attempt to explain Neo to the mosque.



Figure 4. The new concept of the Bagonjong roof on the mosque

In the application of traditional Javanese architecture on the roof of the Sunan Ampel Mosque, the use of the canopy roof cannot be separated from the acculturation of Islamic culture in it where the tip of the roof represents a symbol of the relationship between Man and God. The Sunan Ampel Mosque has undergone several changes to the roof. In the 90s, changes to the shape of the roof were made due to major improvements to the mosque complex so that it formed a dome within the tajug roof frame. The shape of the roof in traditional Javanese architecture cannot be separated from the role of the community who

always tries to maintain the balance and harmony of the universe so that traditional Javanese buildings are the embodiment of the surrounding environment. The shape of the traditional Javanese roof is based on the shape of the mountain and is realized in the form of a canopy roof and undergoes a process of change into a joglo (tajuk loro) (Hermawan & Prihatmaji, 2019). The use of materials in mosque uses natural materials. After a long time of changing due to the renovation of the use of structural materials that initially used wood, now they have used factory materials. However, the wood material is still maintained as an accent for the columns, openings, gates, and roofs. The wood material is still used as a representation of simplicity in Islamic architecture.



Figure 6. The shape of the roof of the Sunan Ampel Mosque
(Source: Abiummi, 2022)

At the Great Mosque of Central Java, the roof style used is a representation of Javanese culture in the form of a Tajug pyramid with a base pole using Javanese batik motifs. And combines Middle Eastern architecture by adding the Dome. The shape of the tajug roof should end up forming a pyramid shape, in this mosque it is replaced with a dome shape that is close to a semi-circular shape, which at the top has a vertical line. In plain view, the mixture of the two forms looks harmonious (Ikhwanuddin, 2011).

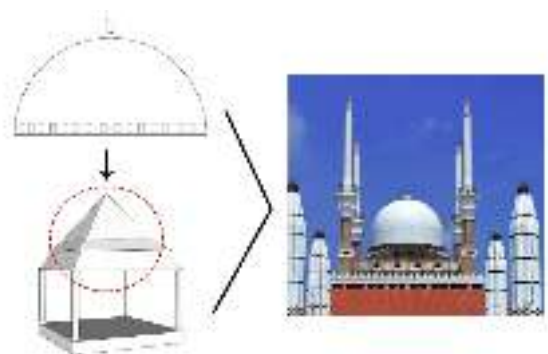


Figure 7. The shape of the roof of the Great Mosque of Central Java
(Source: Eviline, 2013)

The shape of the roof on the K.H. Hasyim Asyari Grand Mosque takes the basic form of Vernacular from a traditional Betawi building, namely the Bapang

house with a triangular roof. The Bapang house itself has a gable shape and is made of wood, while the roof of this mosque has used more modern materials, namely concrete and tiled roofs.



Figure 8. Application of the shape of the Bapang House on the roof of the Great Mosque of K.H. Hasyim Asyari (Source: Yessi, 2018; Rudi, 2017; Nugroho, 2022)

Table 1. The findings of the application of vernacular forms on the roof of the mosque

Element	Mosque	Findings
Vernacular roof	Great Mosque of West Sumatera	<ul style="list-style-type: none"> Bagonjong modification Crescent shape as inspiration Inspired by springs and winds
	Sunan Ampel Mosque	<ul style="list-style-type: none"> Joglo modification 'Tajug' Natural materials for the structure
	Great Mosque of Central Java	<ul style="list-style-type: none"> Tajug modification
	K.H Hasyim Asyari Grand Mosque	<ul style="list-style-type: none"> Bapang modification

Wall ornaments

One of the vernacular applications on the walls of the mosque is using ornaments on the mosque building. The ornaments are obtained from the shapes that can be found in the traditional buildings of each area the mosque originates from. On the roof wall (facade) of the Great Mosque of West Sumatera, there are several carvings of the Gadang House with various moral messages implied in each carving. Several forms, such as kaluak paku and itik pulang petang, are carved into each carving. The writings of Allah SWT are also

included to represent Islamic architecture in it (Supriatna & Handayani, 2021).



Figure 9. Carving of the facade of the gadang house at the Grand Mosque (Source: Saribundo.com, 2016; Pranoto, 2017)

The symbols of traditional ornaments on the walls of the Sunan Ampel Mosque are taken from various combinations of Javanese and Islamic ornaments in it. The ornaments used on the roof of the old mosque and the gate to the tomb are in the form of makutha which means a symbol of purity. And, in some parts of the mosque using geometric flora ornaments which means symbols of heaven plants.



Figure 10. Ornaments at the Sunan Ampel Mosque (Source: Aldina, etc, 2017; Taher, 2020)

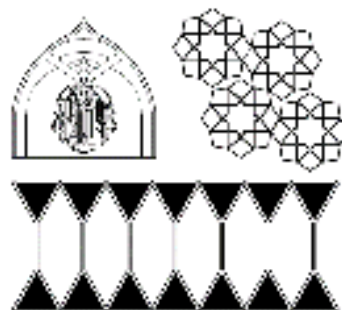


Figure 11. Other ornaments shapes that can find at the Sunan Ampel Mosque mimbar and gate

The walls in the interior of the Great Mosque of Central Java have a very harmonious blend of Javanese architecture with Middle Eastern Islamic architecture. Where the use of calligraphy and traditional Javanese ornaments in the form of flora are used to decorate the inside of this mosque. The materials that have been used have also used more modern materials than the previous ones using wood materials so that they are sturdier and more comfortable.

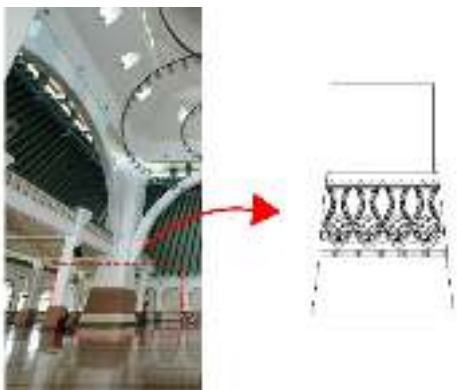


Figure 12. Poles of the Great Mosque of Central Java with Javanese Ornaments
(Source: Katerina, 2015)

On the facade of the wall of the Great Mosque of K.H. Hasyim Asyari, several Betawi ornaments are applied, especially on the railings and pillars on the interior and exterior of the mosque. The railing or mosque fence uses a langkan shape that is usually used for the Bapang house fence on the terrace. The pillars of the mosque building use a shape resembling a gigi balang on the wall and the pillars of the mosque lisplang have a strong defense meaning. Gigi balang is also an ornament in Betawi houses which is usually also placed on the roof of the house which symbolizes a life that must have honesty, diligence, and patience (Nabila, Septiana, Nabila, & Damayanti, 2020).

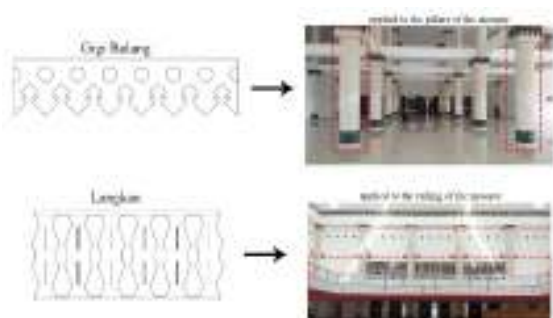


Figure 13. Betawi ornaments on the facade of the mosque
(Source: Putra, 2017; Muhammad, 2022)

Table 2. The findings on the application of vernacular ornaments on mosque walls

Element	Mosque	Findings
Wall Ornaments	Great Mosque of West Sumatera	<ul style="list-style-type: none"> The facade uses the typical ornamental style of the Gadang house such as kaluak paku and itik pulang petang
	Sunan Ampel Mosque	<ul style="list-style-type: none"> Using traditional Javanese, and Islamic architectural ornaments on the walls and also on the doors and Mihrab, namely floral motifs
	Great Mosque of Central Java	<ul style="list-style-type: none"> Some typical Javanese ornaments are used on the door and the pillar of the mosque teacher. Using Islamic ornaments in the form of calligraphy on the walls
	K.H Hasyim Asyari Grand Mosque	<ul style="list-style-type: none"> The application of ornaments from the bapang house such as gigi balang and langkan on the railings, walls, and pillars of the mosque

DISCUSSION

In the 4 mosques, each form of this mosque adapts the vernacular form of each traditional local building where the mosque is located. On the roof of each mosque, each building uses a form of vernacular architecture from the traditional form of the local traditional house. The Great Mosque of West Sumatra adapts the roof shape of the Rumah Gadang, namely Bagonjong which has been modified. The Sunan Ampel Mosque uses typical Javanese architecture in the application of the roof, using the roof form of the Joglo House, namely Tajug which has changed the shape and material used. The Great Mosque of Central Java uses Javanese and Islamic vernacular architecture in the application of the roof form, namely by using a mixture

of Tajug and Dome roofs so that a new shape is formed but does not eliminate the local architecture. The Great Mosque of KH Hasyim Asyari uses the vernacular roof form of a typical Betawi house, namely Rumah Bapang by adopting a triangular shape.

The application of ornaments on the walls of the mosque also uses vernacular forms from local traditional architecture. The Great Mosque of West Sumatra uses the form of the Rumah Gadang ornament, namely kaluak nails and ducks returning in the evening. Sunan Ampel Mosque uses ornaments from Javanese architecture in the form of flora and Islamic calligraphy. The Great Mosque of Central Java also uses Javanese ornaments and Islamic calligraphy on the walls and several pillars of the mosque. The KH Hasyim Asyari Mosque uses Betawi ornaments from the Bapang House, which are applied to the walls and railings, namely Langkan and Gigi Balang.

From the results of this finding, when referring to the opinion of Salain (2017), it is very similar, that Vernacular architecture develops over time to reflect the environment, culture, and history of the origin of the architecture.

Table 3. Findings of Vernacular shapes in mosques

Element	Mosque	Vernacular Findings	Application
Vernacular roof	Great Mosque of West Sumatra	Using the form of a bagonjong roof in the gadang house, using the crescent shape as inspiration, And inspired by the shape of springs and winds	
	Sunan Ampel Mosque	Applying the vernacular form of the Joglo roof, namely Tajug, and still using natural materials in the structure	
	Grand Mosque of Central Java	The application of Javanese Vernacular Architecture, namely the Tajug Roof and the Middle East on one roof	
Wall ornaments	K.H Hasyim Asyari Grand Mosque	Applying the Betawi Vernacular form of the Bapang house on the roof of the mosque	
	Great Mosque of West Sumatra	The facade uses the typical ornamental style of the Gadang house such as kaluak paku and itik pulang petang	
	Sunan Ampel Mosque	Using traditional Javanese, and Islamic architectural ornaments on the walls and on the doors and Mihrab, namely floral motifs	

Grand Mosque of Central Java	Some typical Javanese ornaments are used on the door and on the pillar of the mosque teacher, and using Islamic ornaments in the form of calligraphy on the walls
K.H Hasyim Asyari Grand Mosque	The application of ornaments from the bapang house such as gigi balang and langkan on the railings, walls, and pillars of the mosque

CONCLUSION

Based on these 4 mosque cases, it can be concluded that the application of vernacular roofs and vernacular ornaments on the walls of each mosque is as follows. The roof of the Great Mosque of West Sumatra is a modification of the local architectural form of Rumah Gadang, the roof of the Sunan Ampel Mosque is a modification of the form of local Javanese architecture, namely the Joglo House (Tajug), the roof of the Great Mosque of Central Java mixes local architecture with Islam, namely applying the shape of the Tajug roof that was built with the dome, and the roof of the KH Hasyim Asyari Grand Mosque using the local form of the Betawi house, namely the Bapang House. The use of vernacular ornaments on the walls of each mosque also uses local architecture from each mosque area. The Great Mosque of West Sumatra uses ornaments typical of West Sumatra on the walls of the mosque and its roof, the Sunan Ampel Mosque uses ornaments typical of the Java region and Islam on the walls and pulpit of the mosque, the Great Mosque of Central Java uses ornaments typical of Java and Islam on the walls and pillars mosques, as well as the Great Mosque of KH Hasyim Asyari, use typical Betawi ornaments on the walls.

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